

a heating element consisting of an thick film electrically resistive circuit applied directly to a surface of said target object; and

wherein said thick film electrically resistive circuit is polymer based.

2. (Amended) The thick film heater of claim 1 wherein said target object is maintained at a temperature below -75 °C.

3. (Amended) The thick film heater of claim 2 wherein said target object is maintained at a temperature below -150 °C.

REMARKS

This Amendment is intended to be fully responsive to the Office Action dated October 19, 2001. Claims 1-26 are pending, of which claims 1-13 have been rejected and claims 14-26 have been allowed. Reconsideration of the rejected claims is respectfully requested following the present Amendment and entry of the following remarks:

1. The rejection of claims 1-13 under 35 U.S.C. § 112, second paragraph is respectfully traversed. Applicants do not intend to claim the sub-zero degree temperature environment as an element of the invention. However, Applicants do intend to claim in these particular claims that the target object is one that is kept below freezing. The heater need not be manufactured under such harsh conditions, however, the subsequent cooling of the target object below the claimed temperatures would bring the manufactured heater within the intended scope of the claims and Applicants' invention. Applicants believe that the claims adequately reflected this limitation before the entry of the present Amendment, and therefore the present Amendment of claims 1-3 is made only for the sake of further clarity and not for the purpose of patentability. Accordingly, reconsideration of the claims is respectfully requested.

2. The rejection of claims 1-5, 7, and 10-13 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,308,311 to Eggers et al. is respectfully traversed. Applicants first wish to point out that Eggers does not claim all of the limitations of the claimed invention, as the target object must be below 0 °C as discussed above. As Eggers does not contain all of the limitations of the claimed invention in a single reference, a rejection under § 102 cannot be proper. Furthermore, Applicants do not believe that the blade in Eggers is inherently operable at temperatures below -150 °C. There is no reference to sub-zero temperatures in Eggers, and in fact it is disclosed that the operating temperature is between 20 °C and 70 °C. There is no teaching nor suggestion that heating element in Eggers would fair any better than conventional thick film heating elements in harsh temperatures, as discussed by Applicants in paragraphs 0004-0006 of the specification. Accordingly, reconsideration of the rejected claims is respectfully requested.

3. The rejection of claims 6, 8, and 9 as being unpatentable over Eggers is respectfully traversed. For the reasons stated above, Eggers does not fairly teach nor suggest, the use of a thick film heating element applied directly to a target object maintained at sub-zero temperatures. Therefore, the claimed invention cannot be obvious in view of Eggers alone. Accordingly, reconsideration of the rejected claims is respectfully requested.

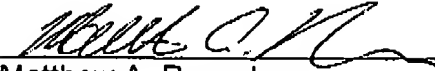
4. As all of the Examiner's requirements and suggestions have been satisfied and the claims have been amended to overcome the rejections, Applicants respectfully submit that the application is now in a condition for allowance. Reconsideration is respectfully requested. Examiner is invited to telephone or e-mail the undersigned with any questions regarding this Amendment.

No additional fee is due.

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Respectfully submitted,


Matthew A. Rosenberg
Reg. No. 40,149
Attorney for Applicant

BLUMENFELD, KAPLAN & SANDWEISS, P.C.
168 North Meramec, Suite 400
Saint Louis, Missouri 63105
Tel: (314) 863-0800
Fax: (314) 863-9388

APPENDIX A
MARKED-UP VERSION OF AMENDED CLAIMS PER 37 C.F.R. § 1.121(c)(1)(ii)

1. (Amended) A thick film heater comprising:

a target object to be heated, wherein said target object is located in an environment of ambient temperatures significantly maintained at a temperature below 0 °C;

a heating element consisting of an electrically thick film electrically resistive circuit applied directly to a surface of said target object; and

wherein said electrically thick film electrically resistive circuit is polymer based.

2. (Amended) The thick film heater of claim 1 wherein said target object is ~~designed to operate~~ maintained at a temperatures below -75 °C.

3. (Amended) The thick film heater of claim 2 wherein said target object is ~~designed to operate~~ maintained at a temperatures below -150 °C.